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Page 2 of 8

Preliminary Amendment

Applicant(s): Heuts et al.

Serial No. 10/507,168

Filed: May 5, 2005

For: POLYMERIZATION OF A REACTIVE DILUENT IN THE PRESENCE OF AN EPOXY-AMINE
MATERIAL, AND COATING COMPOSITIONS PREPARED THEREBYAmendments to the Claims

This listing of claims replaces all prior versions, and listings, of claims in the above-identified application:

1. **(Previously Presented)** A method of preparing a coating composition, comprising the steps of:

 combining an amine and an epoxy material in the presence of a reactive diluent comprising at least one methacrylate compound to provide a composition comprising an advanced molecular weight epoxy-amine material and a reactive diluent;

 making an aqueous dispersion of the composition; and

 polymerizing the reactive diluent to provide the coating composition.
2. **(Canceled)**
3. **(Original)** The method of claim 1, wherein the step of making the aqueous dispersion comprises combining the composition with an acid.
4. **(Previously Presented)** The method of claim 1, wherein the epoxy material is derived from Bisphenol A and epichlorohydrin.
5. **(Previously Presented)** The method of claim 1, wherein the epoxy material is dissolved or dispersed in the reactive diluent.
6. **(Original)** The method of claim 1, wherein the epoxy-amine material has residual epoxy functionality.
7. **(Original)** The method of claim 6, further comprising the step of:

 reacting the epoxy-amine material having residual epoxy functionality with an active hydrogen compound or precursor.

Preliminary Amendment

Page 3 of 8

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8. (Original) The method of claim 7, wherein the step of reacting is carried out before the step of making the aqueous dispersion.
9. (Currently Amended) ~~[[A]]The method of claim 7, preparing a coating composition, comprising the steps of:~~
 ~~making an aqueous dispersion of a composition comprising an advanced molecular weight epoxy-amine material having residual epoxy functionality and a reactive diluent;~~
 ~~polymerizing the reactive diluent to provide the coating composition; and~~
 ~~reacting the epoxy-amine material having residual epoxy functionality with an active hydrogen compound or precursor;~~
 wherein the step of reacting is carried out after the step of making the aqueous dispersion.
10. (Currently Amended) ~~[[A]]The method of claim 7, preparing a coating composition, comprising the steps of:~~
 ~~making an aqueous dispersion of a composition comprising an advanced molecular weight epoxy-amine material having residual epoxy functionality and a reactive diluent;~~
 ~~polymerizing the reactive diluent to provide the coating composition; and~~
 ~~reacting the epoxy-amine material having residual epoxy functionality with an active hydrogen compound or precursor;~~
 wherein the step of reacting is carried out after the step of polymerizing the reactive diluent.
11. (Original) The method of claim 1, wherein the coating composition further comprises a crosslinker.
12. (Original) The method of claim 1, wherein the aqueous dispersion further comprises a surfactant.

Preliminary Amendment

Page 4 of 8

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13. **(Original)** The method of claim 3, wherein the composition is combined with a surfactant before combining the composition with the acid.
14. **(Original)** The method of claim 3, wherein the acid is an aqueous acid.
15. **(Original)** The method of claim 1, wherein the step of making the aqueous dispersion comprises:
combining the composition with an acid to provide an acidified composition; and
combining the acidified composition with an aqueous liquid.
16. **(Original)** The method of claim 15, wherein the aqueous liquid further comprises a surfactant.
17. **(Original)** The method of claim 1, wherein the reactive diluent comprises a multifunctional material.
18. **(Currently Amended)** ~~[[A]]The method of claim 1, further preparing a coating composition, comprising the [[steps]] step of:~~
~~making an aqueous dispersion of a composition comprising an advanced molecular weight epoxy-amine material and a reactive diluent;~~
~~adding an additional reactive diluent before the polymerizing step; and~~
~~polymerizing the reactive diluent to provide the coating composition.~~
19. **(Original)** The method of claim 1, wherein the reactive diluent is polymerized by free radical polymerization.
20. **(Original)** The method of claim 1, wherein the coating composition further comprises a solvent.

Preliminary Amendment

Page 5 of 8

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21. **(Currently Amended)** The method of claim 1, wherein the coating composition is selected from the group consisting of a packaging coating composition, an anticorrosive coating composition, a stain blocker coating composition, a paper coating composition, a cement board coating composition, a fiberboard coating composition, and combinations thereof.
22. **(Original)** The method of claim 1, wherein the coating composition is substantially free of solvent.
23. **(Original)** The method of claim 1, wherein the coating composition has a volatile organic compound content of at most 0.2 kilograms per liter of solids.
24. **(Original)** The method of claim 3, wherein the coating composition has a volatile organic compound content, excluding acid, of at most 0.2 kilograms per liter of solids.
25. **(Original)** A coating composition prepared according to the method of claim 1.
26. **(Original)** A method of coating an article comprising the steps of:
applying a coating composition prepared according to the method of claim 1 to an article;
and
hardening the coating composition to provide a coated article.
27. **(Original)** The method of claim 26, wherein the coating composition further comprises a crosslinker.
28. **(Original)** The method of claim 26, further comprising the step of heating the coated article to provide a crosslinked coating.
29. **(Original)** The method of claim 26, wherein the step of applying comprises applying the coating composition by an electro coat process.

Preliminary Amendment

Page 6 of 8

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30. **(Previously Presented)** The method of claim 1 wherein the at least one methacrylate compound comprises butyl methacrylate.
31. **(Previously Presented)** The method of claim 30 wherein the reactive diluent further comprises at least one vinyl compound.
32. **(Previously Presented)** The method of claim 31 wherein the at least one vinyl compound comprises styrene.
33. **(Previously Presented)** The method of claim 32 wherein at least 7.5% by weight and at most 80% by weight reactive diluent is used, based on the total combined weight of epoxy material, amine, and reactive diluent.
34. **(Previously Presented)** The method of claim 33 wherein at least 15% by weight and at most 50% by weight reactive diluent is used, based on the total combined weight of epoxy material, amine, and reactive diluent.